CLAIMS

1. A method of performance analysis using machine learning comprising:

generating a plurality of training records to model the behavior of a first application;

creating a decision tree classifier having a plurality of tests based on the plurality of training records; and

applying said decision tree classifier to a second application.

2. The method of claim 1, wherein the first application is a communication operation.

3. The method of claim 2, wherein said communication operation is an MPI.

4. The method of claim 1, wherein said plurality of training records include efficient and inefficient behavior.

5. The method of claim 1, wherein each of said plurality of training records include information about a communication message transfer.

6. The method of claim 1, wherein each of said plurality of training records include at least two attributes identifying a type of send operation and a type of receive operation.

7. The method of claim 6, wherein each of said plurality of training records further include at least five durations relating to transfer information.

8. The method of claim 1, wherein said second application is a communication application; and

the decision tree classifier categorizes the second application by location of sender and receiver.

9. The method of claim 1, further comprising:

verifying the plurality of tests by applying the decision tree classifier to the first application.

10. A system for performance analysis using machine learning comprising:

a microprocessor and memory configured to generated a plurality of training records to model the behavior of a first application;

the microprocessor and memory configured to create a decision tree classifier having a plurality of tests based on the plurality of training records; and

the microprocessor and memory configured to apply said decision tree classifier to a second application.

11. The system of claim 10, wherein the first system is a communication operation.

12. The system of claim 11, wherein the communication operation is an MPI.

13. The system of claim 10, wherein each of said plurality of training records include at least two attributes identifying a type of send operation and a type of receive operation.

14. The system of claim 10, wherein said second application is a communication application; and

the decision tree classifier is designed to categorize the second application by location of sender and receiver.

15. A system of performance analysis using machine learning comprising:

a means for generating a plurality of training records to model the behavior of a first application;

a means for creating a decision tree classifier having a plurality of tests based on the plurality of training records; and

a means for applying said decision tree classifier to a second application

16. A computer readable medium having instructions for performance analysis using machine learning comprising:

said instructions configured to generated a plurality of training records to model the behavior of a first application;

said instructions configured to create a decision tree classifier having a plurality of tests based on the plurality of training records; and

said instructions configured to apply said decision tree classifier to a second application.

17. A computer readable data transmission medium having a data structure for performance analysis using machine learning comprising:

said data structure configured to generated a plurality of training records to model the behavior of a first application;

said data structure configured to create a decision tree classifier having a plurality of tests based on the plurality of training records; and

said data structure configured to apply said decision tree classifier to a second application.

18. A method comprising:

generating a plurality of training records to model the behavior of a first application;

creating a decision tree classifier having a plurality of tests based on the plurality of training records; and

applying said decision tree classifier to a second application.

19. The method of claim 18, wherein each of said plurality of training records include at least two attributes identifying a type of send operation and a type of receive operation.

20. The method of claim 18, further comprising:

performing a performance analysis of the second application.